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Receipt

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Weimin Sun et al.

Title: IMPROVED RATE-ADAPTIVE THERAPY WITH AUTOMATIC LIMITING OF MAXIMUM  
PACING RATE

Docket No.: 279.279US1

Filed: September 8, 2000

Examiner:

Serial No.: 09/657,404

Due Date: N/A

Group Art Unit: 3737

Commissioner for Patents  
Washington, D.C. 20231

We are transmitting herewith the attached:

- Communication Re: Incorrect Filing Receipt (1 pg.)
- Copy of Filing Receipt (1 pg.)
- A return postcard.
- Copy of first page of application (1 pg.)

No Additional fee is required.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938, Minneapolis, MN 55402 (612-373-6900)

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SEP 23 2002  
TECHNOLOGY CENTER R3700

By: Timothy E. Bianchi  
Name: Timothy E. Bianchi  
Reg. No. 39,610  
TEB:CMG:pms

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on this 23 day of August, 2002.

Paula Suny  
Name

Paula Suny  
Signature

SN 09/657,404

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Weimin Sun et al. Examiner:  
Serial No.: 09/657,404 Group Art Unit: 3737  
Filed: September 8, 2000 Docket: 279.279US1  
Title: IMPROVED RATE-ADAPTIVE THERAPY WITH AUTOMATIC LIMITING  
OF MAXIMUM PACING RATE

COMMUNICATION RE: INCORRECT FILING RECEIPT

Commissioner for Patents  
Washington, D.C. 20231

Applicants hereby request correction of the Filing Receipt with respect to the above-identified patent application. In the Updated Filing Receipt received July 31, 2002, (copy enclosed), the title is incorrect. The Updated Filing Receipt reads: Rate-adaptive therapy with automatic limiting of maximum pacing rate; it should read: IMPROVED RATE-ADAPTIVE THERAPY WITH AUTOMATIC LIMITING OF MAXIMUM PACING RATE. This is evidenced by the first page of the application (copy enclosed).

Applicants would appreciate the above-identified printing error be corrected and that a new "corrected" filing receipt be sent to Applicants' representatives at the address given below.

Respectfully submitted,

WEIMIN SUN ET AL.

By their Representatives,

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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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(612) 373-6912

Date

Aug. 21, 2002

By

Timothy E. Bianchi

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Paula Suchy  
Name

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Signature



# UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/657,404	09/08/2000	3737	960	279.279US1	7	25	2

21186  
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402



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CONFIRMATION NO. 3413  
UPDATED FILING RECEIPT

□□□□□□□□□□□□□□□□□□  
\*OC000000008548321\*

Date Mailed: 07/31/2002

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

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AUG 07 2002

Schwegman, Lundberg  
Woessner & Kluth, P.A.

## Domestic Priority data as claimed by applicant

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TECHNOLOGY CENTER R3700

## Foreign Applications

If Required, Foreign Filing License Granted 10/19/2000

Projected Publication Date: Not Applicable, filed prior to November 29, 2000

Non-Publication Request: No

Early Publication Request: No

## Title

Rate-adaptive therapy with automatic limiting of maximum pacing rate

Schwegman, Lundberg,  
Woessner & Kluth, P.A.

AUG 05 2002

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Schwegman, Lundberg  
Woessner & Kluth, P.A.

## Preliminary Class

IMPROVED RATE-ADAPTIVE THERAPY WITH AUTOMATIC  
LIMITING OF MAXIMUM PACING RATE

Field of the Invention

5 This invention pertains to systems and methods for cardiac rhythm management. In particular, the invention relates to a system and method for automatically adjusting the operating parameters of a rate-adaptive cardiac pacemaker.

Background

10 A conventional cardiac pacemaker is an implantable battery-powered electronic device that responds to sensed cardiac events and elapsed time intervals by changing its functional states so as to properly interpret sensed data and deliver pacing pulses to the heart at appropriate times. The pacing pulses are delivered through a lead made up of electrodes on a catheter or wire that connects the pacemaker to the heart. Some electronic 15 devices, called implantable cardioverter-defibrillators, are capable of delivering electrical shocks, rather than small-intensity pacing stimuli, in order to cardiovert or defibrillate the heart. The term "pacemaker" as used herein, however, should be taken to mean both pacemakers and any device with a pacemaking function, such as an implantable cardioverter/defibrillator with a pacemaker incorporated therein.

20 Pacemakers can generally operate in a variety of modes, generally designated by a letter code of three positions where each letter in the code refers to a specific function of the pacemaker. The first letter refers to which heart chambers are paced and which may be an A (for atrium), a V (for ventricle), D (for both chambers), or O (for none). The second letter refers to which chambers are sensed by the pacemaker's sensing channels 25 and uses the same letter designations as used for pacing. The third letter refers to the pacemaker's response to a sensed P wave from the atrium or an R wave from the ventricle and may be an I (for inhibited), T (for triggered), D (for dual in which both triggering and inhibition are used), and O (for no response). Modern pacemakers are typically programmable so that they can operate in any mode which the physical 30 configuration of the device will allow. Additional sensing of physiological data allows some pacemakers to change the rate at which they pace the heart in accordance with some parameter correlated to metabolic demand. Such pacemakers, which are the primary



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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/657,404	09/08/2000	Weimin Sun	279.279US1

21186  
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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\*OC00000008781470\*

Date Mailed: 09/12/2002

**RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT**

**Title of Invention**

In response to your request for a corrected Filing Receipt, the Office is unable to comply with your request because:

- The articles such as "a," "an", and "the" are not included as the first words in the title of an application. They are considered to be unnecessary to the understanding of the title.
- The words "new," "improvement," "improvements in", or "relating to" are not included as the first words in the title of an application because a patent application is, by nature, a new idea or improvement. See MPEP 606.01.
- The title may be truncated if it consists of more than 500 characters (letters and spaces combined).
- Superscript and subscript are not possible. They will appear on the same line.

Any corrections that may need to be done to your Filing Receipt should be directed to:

Assistant Commissioner for Patents  
Office of Initial Patent Examination  
Customer Service Center  
Washington, DC 20231

*A copy of this notice **MUST** be returned with the reply.*

*Neris Kuropus*  
Customer Service Center  
Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY